

# **The Cultural Crafting of Embryonic Stem Cells: The Metaphorical Schematisation of Stem Cell Research in the Polish and French Press<sup>1</sup>**

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## **Abstract**

In diesem Artikel werden Ähnlichkeiten und Unterschiede in der anfänglichen Schematisierung der Stammzellenforschung im öffentlichen Diskurs Polens und Frankreichs untersucht. Zwei Zeitungskorpora (*Le Monde* und *Gazeta Wyborcza*) aus den Jahren 1998-2000 wurden im Hinblick auf die Frage analysiert, inwiefern beide Zeitungen ähnliche oder kulturspezifische Metaphernnetzwerke in der Bildung von ‚Stammzellrealitäten‘ aufbauen. Der Artikel basiert auf der Annahme, dass Metaphern im Diskurs eine wichtige Funktion bei der Bildung interpretativer Bezugssysteme für die Diskussion sozialer und philosophischer Implikationen der Stammzelltechnologie zukommt. Der Ausgangspunkt bestand in der Überlegung, dass sich die beiden wichtigsten Zeitungen der beiden Länder in der anfänglichen Schematisierung der Stammzellenforschung unterscheiden würden (besonders bezüglich kultureller und religiöser Werte in den jeweiligen öffentlichen Debatten). Im Verlauf der Untersuchung stellte sich jedoch heraus, dass beide Zeitungen sehr ähnliche Metaphern in der Berichterstattung zur Stammzellenforschung gebrauchen. Kulturelle Unterschiede in der Interpretation von Stammzellenforschung existieren möglicherweise eher auf der Ebene ideologischer Gruppen als auf der nationaler Kulturen.

This paper scrutinises similarities and differences in the initial metaphoric schematisation of embryonic stem cell research across two languages and cultures: France and Poland. Corpora from *Le Monde* and *Gazeta Wyborcza* covering the years 1998-2000 were analysed in order to assess whether these papers use cross-culturally shared or culture-specific networks of metaphors to shape either convergent or divergent ‘stem cell realities’. The paper examines the categorising force of metaphor in framing discourses about the social and philosophical implications of stem cell technology. It was assumed that the major newspapers of France and Poland, *Le Monde* and *Gazeta Wyborcza*, would differ in the initial schematisation of stem cell research in a way that matches the cultural differences between the two countries, especially with regard to the prominence of religious values in public debates. However, our analysis suggests that the coverage of stem cell research in these two newspapers used largely similar imagery. Cultural differences in the interpretation of stem cell research might exist on the level of ideological groups rather than national cultures.

## **1. The evolving European discourse on stem cell research**

Embryonic stem cells (ESCs) are new biological actors or entities (Waldby 2002:306) which have, over the last few years, contributed to restructuring the domain of biotechnological discourse. Since the publication of two papers in 1998 describing the in vitro growth of human embryonic stem cells (Alison et al. 2002), scientists have become aware that undifferentiated (pluripotent) ESCs might have a huge potential in the field of tissue engineering and regenerative medicine. They hold the potential of producing every type of cell and tissue in the body which means that they could revolutionise the treatment of

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cardiovascular disease and neurodegenerative diseases, such as Alzheimer's, Huntington's and Parkinson's, cancer and diabetes. Since 1998, stem cell research (SCR) has evolved speedily on a global level and continues to do so (see Blau et al. 2001 and Rippon/Bischoff 2004). It is becoming a key technology of even greater popular interest than research on the human genome (Keller 2000 and Rose 2001). Recent research has shown that it might be possible to produce pluripotent stem cell lines which start to differentiate on command, offering an unlimited stock of transplantable body tissue types.

Since the decoding of the human genome in 2000, SCR has become the object of a public controversy throughout Europe. There are differences however in the scale and 'density' of the debate, some debates being *thicker*, some *thinner*<sup>2</sup>. These differences cut across public debates in long standing as well as in future European Union member states. However, the controversy increased with the publication of the Donaldson (2000) report in the UK which suggested that research should be allowed on embryos created either by *in vitro* fertilisation (IVF) or by cell nuclear replacement (CNR) – i.e. cloning. The debate intensified further when Severino Antinori, a controversial Italian fertility specialist, claimed that the Donaldson report had encouraged him to try to clone a baby (Nerlich/Clarke 2003). The Antinori case in particular might have reinforced the link in public understanding between SCR and therapeutic cloning on the one hand, and reproductive cloning and designer babies on the other (Nerlich/Johnson/Clarke 2003).<sup>3</sup> The debate about ESCs can therefore be understood as a "[...] complex bundle of simultaneous and sequential interrelated linguistic acts [...]" (Reisigl/Wodak 2001:66) which blended debates on cloning, genetic engineering, designer babies and the human genome that have taken place all over Europe since Dolly the sheep was cloned in 1997.

In 2001, the report *Stem cell research at the European level* was published by the European Union. The report stressed the need for a culturally based ethical, legal and regulatory framework for stem cell research in Europe: "Europe needs to develop an ethical, legal and

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<sup>2</sup> See Evans (2002:7) who underlines that in the United States "[...] a bigger, deeper, more fundamental, or 'thicker' debate has been replaced by a smaller, shallower, more superficial, or 'thinner' one. At a time when society should be debating which goals or ends human genetic engineering would forward, from among all possibilities, the debate has been restricted to only a few institutionalised ends. And at a time when we should be attempting to derive societal ends, we have shifted decision making to the autonomous individual."

<sup>3</sup> The most flexible source for deriving stem cell lines is the human embryo which obviously brings with it all well known debates that surround the embryo, the foetus, the discourse on abortion, the right to live etc. Moreover, the discourse on embryonic stem cells is connected with cloning technologies and the sheep Dolly and therefore mixes therapeutic cloning (stem cell production) and reproductive cloning (production of a new creature). Thus, "cloning" has a negative connotation mostly indicating reproductive cloning and the dangers of modern biology. See Franklin (2001a).

regulatory framework for stem cell research and therapy respecting cultural pluralism and based on identification of areas of consensus” (Joliff-Botrel/Matthiessen 2001:4). This perspective was reinforced by placing emphasis on the plurality of ethical values and beliefs: “Informing the public is not enough. We need to learn to listen to concerns expressed and to respect the diversity of ethical values and beliefs, which characterise Europe” (Joliff-Botrel/Matthiessen 2001:412). A closer look at the debates in the European Union concerning SCR reveals a diversity of national frameworks and public discourses (Bender/Hauskeller/Manzei 2005), but also an underlying similarity in framing SCR regulations. For example, the UK’s relative permissiveness and utilitarian perspective (Hauskeller 2004b) contrasts strongly with Germany’s restrictive and reflexive approach (Döring/Nerlich 2004), which is informed by the history of Nazi eugenics (Nüsslein-Vollhard 2002). In Germany, SCR is a highly contested public issue fuelled by a philosophical debate (see Habermas 2001, Wormer 2001 and Kettner 2004) in a way it is not in Great Britain or Sweden (Kulawik 2003), while the Netherlands seem to occupy a middle ground on which different argumentative strategies are tested (Biesboer 2003). The UK has “[...] the most liberal regulations concerning embryo research and reproductive medicine and supports embryonic stem cell research more strongly than any other country in Europe” (Hauskeller 2004b:510); the influence of the church is slight in the UK, more complex in Germany, and has much deeper impact on policy and public perception in Italy (Maio 2001) – as demonstrated by the failure of a referendum, in June 2005, to relax regulations restricting fertility treatment and SCR, which was, by some, seen as a victory of the Vatican – and arguably in other catholic countries such as Poland and Romania. Harvesting stem cells from IVF embryos is allowed in Sweden, Finland, the Netherlands, the UK and – since 6<sup>th</sup> of August 2004 – also in France, while taking stem cells from embryos in Germany is still illegal.

The political and ethical problems surrounding SCR in Europe have still not been entirely resolved to date and the rapidly changing situation will have to be closely monitored. Even though there is a growing literature on US<sup>4</sup>, national European disputes<sup>5</sup> and international stem cell debates (Bender/Hauskeller/Manzei 2005), in-depth cultural studies, “[...] highlighting the importance of national cultures and local dynamics in the process of crafting the space for human embryo research” (Kirejczyk 1999:889), are still rare. This is surprising

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<sup>4</sup> See for example Green (2001), Holland/Lebracqz/Zoloth (2001) and Nisbet/Brossard/Kroepsch (2003).

<sup>5</sup> See for example Hauskeller (2002a), Hauskeller (2002b), Albrecht/Dierken/Freese/Höbke (2003), Leydesdorff (2003), Williams/Kitzinger/Henderson (2003), Hauskeller (2004b), Döring/Nerlich (2004)

as the advances in biotechnology destabilise and restructure the networks defining the naturalised relation “[...] between bodies, bodily fragments, human identities and social systems” (Walby 2002:308). In short, biotechnology challenges the socio-cultural understanding and organisation shaping human “[...] self-descriptions [...]” (Novas/Rose 2000:487). Thus, the probable use of tissue resources or ESC clusters with the optimistic pro-SCR prospect of renewable health collides with the opponents of SCR framing this tiny little cell collection as a proto human being. On the one hand there is human life and its narrative which starts with insemination while on the other hand cell clusters are conceived as a kind of raw cell material holding a pre-human biological vitality. Advances in SCR – as Habermas (2001:45) underlined – undermine a type of ethics that is based on a ‘generic’ concept of ‘the human’, and demonstrate instead that *the human* is not a biological or natural concept but a complex bundle of intertwined technological, scientific, cultural, economic and social discourses. ESCs are contested cells and the lack of a narrative closure (Leach 1998:128) defining what they are represents a typical case of epistemic uncertainty in the realm of ‘ontopolitics’.<sup>6</sup> This seems to confirm the view that scientific knowledge cannot produce knowledge to order but, in the process of knowledge generation, becomes a part of the problem (see also Law 2004:3).

The aim of this article is therefore to answer the following question: How can linguistic analysis contribute to an understanding of the processes of reciprocity and mediation between humans and ESCs and how could linguistics contribute to an understanding of how particular ESC-realities are constructed and reconstructed? A discourse analytical (DA) perspective was used to examine the media visions and images of ESCs and SCR in Poland and France between 1998 and 2000. The focus of the analysis was to examine and compare metaphorical mappings in our corpus of the *Gazeta Wyborcza* (Poland) and *Le Monde* (France).

In the next section we provide insights into the concepts of critical discourse analysis and metaphor with the aim of developing a methodological and theoretical background for investigating the press coverage. We then go on to examine the discursive matrices of the ESC-coverage in the *Gazeta Wyborcza* and *Le Monde* before we assess how bioethics could be improved by including the in-depth analysis of socio-cultural realities.

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<sup>6</sup> See also Law (2004:3): “Reality is not a fixed thing out there. Instead it pushes us to what Annemarie Mol [1999;M.D./J.Z.] calls ‘ontological politics’ and Isabelle Stengers and Bruno Latour calls ‘ontopolitics’. The natural, the real, is not a gold standard. It can, at least in principle, be unmade and reconstructed otherwise.”

## 2. Concepts of discourse and metaphor

Contemporary studies of bioethics have recently taken a discursive turn<sup>7</sup>. This trend began when the human genome was deciphered between 2000 and 2003 and continued alongside the ongoing advances in the biomedical sciences leading – for example – from genomics to proteomics. The quantity of discourse-oriented studies has recently increased, leading to a de- and reconstruction of the advances in biotechnology such as SCR and other issues in conjunction with philosophical and sociological studies<sup>8</sup>. Linguistic studies, on the other hand, are still rare.<sup>9</sup> Back in 1993 the policy analyst Schön argued that the essential difficulties in social policy have to do more with problem setting than with problem solving. For him, the framing of problems often depends upon metaphors underlying the stories which generate problem settings and the set of the direction of problem solving (Schön 1993:143-144). Since then, sociolinguists and social scientists interested in policy and governance have paid increasing attention to the emergence and use of policy-relevant discursive methodologies and theories of metaphor (see Koller 2003).

Heterogeneity and hybridity<sup>10</sup> are the main characteristics of discourse analysis (DA), but the differing research strands overlap with regard to the following four basic assumptions (Keller 2004:8):

1. they analyse the use of (written and spoken) language and symbols in social practice;
2. they stress that meaning construction is a contextualised social phenomenon;
3. they are certain that hybrid means of interpretation and meaning constructions become part of an overarching discourse structure which is organised and stabilised by institutional and other contexts;
4. they are convinced that the use of symbols and symbolic orders is generated by underlying rules of interpretation and acting, and that the aim of discourse analysis is to reconstruct these patterns.

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<sup>7</sup> For a critical assessment of discourse as an object of study see Widdowson (1995:158): “Discourse is something everybody is talking about without knowing with any certainty just what it is: in vogue or vague.”

<sup>8</sup> See for example the contributions in Hauskeller (2002), Goodman/Heath/Lindee (2003), in Nerlich/Dingwall/Martin (2004) and in Bender/Hauskeller/Manzei (2005). See also the papers published in the *Journal New Genetics and Society* which is entirely devoted to the social and cultural perception and responses of biotechnology.

<sup>9</sup> See for example Kollek (1994), Blumenberg (1999), Carcarelli (2002), Hellsten (2002), Weigel (2002), Calsamiglia/van Dijk, (2003), Nerlich/Hellsten (2004), Döring/Nerlich (2004) and Döring (in press).

<sup>10</sup> See Chouliaraki/Fairclough (1999:13): “Hybridity is not a matter from ‘pure’ to hybrid practices – people are always working with practices which are already hybrid [...]”

Thus, one could interpret discourses as frames that determine what counts as evidence, how hybrid information is interpreted and how problems are defined. Storylines, actors and practices, in sum, generate specific customs of acting and ways of thinking in social and policy domains which become materialised discursive repertoires. These discursive repertoires could be understood as forms of exercising power in certain social contexts and the task is to assess how such ‘powerful’ discursive reservoirs are created and used to govern the subject from inside.

These concepts of discourse analysis refer to Michel Foucault’s (1969) ‘archaeology’ of knowledge, a methodology for uncovering the arrangement and diffusion of knowledge or discursive practices (Foucault 1974). The idea of an archaeological analysis comprises a gigantic research program including the differing speech acts and the making and ordering of practices, things, human beings, ideas etc. It could be understood – in the present context – as a kind of snapshot analysis of a discursive domain such as SCR at a certain point of its history. Thus, the archaeology of knowledge is an attempt to investigate the differing patterns underlying a history of knowledge as truth (Foucault 1989) – truth to be understood as constantly ongoing ‘truth-games’ reflecting experiences, establishing interpretative repertoires (Potter 1996) and generating govern-mentalities which shape the conduct of diverse actors and agencies. As power networks are normally decentred or hybrid entities, the analysis of power relations was later turned into a ‘microphysics’ of power (Foucault 1976), investigating mechanisms which align economic, social and personal conduct within a socio-cultural context. Consequently, the formation of commonly shared metaphors structuring a domain of discourse opens a way to representing and conceptualising a topic such as SCR. However, SCR is not only a topic for discourse analysis but also a field of policy concerns in which norms, strategies and interests are contested and (re)negotiated. Foucault (1979) understands governmentality as a complex form of power based on various practices, which include the use of interpretative repertoires consisting of “[...] a lexicon or register of terms and metaphors, drawn upon to characterize and evaluate actions and events [...]” (Potter/Whetherell 1987:138). Part of this repertoire are *discourse metaphors*, which constitute the habitual and discursively constructed imagery or discursive matrices associated with a target domain within a particular discourse over a certain period of time (Zinken/Hellsten/Nerlich 2005).

Metaphor is an interesting case, as its analysis uncovers patterns of meaning including their ideological attachments (Fairclough 1989:119) or loadings (Halliday 2001:190) within the

conceptual framework of ‘govern-mentality’. As a cognitive means of representing one aspect of experience in terms of another it does not only merge old meanings or experiences with new ones, it creates “ [...] what we would call cultural cosmologies or meaning worlds that, once built, for better or for worse become the homes in which we reason and act [...]” (Harrington 1995:359). Interestingly, different metaphors imply different ways of dealing and experiencing things and generate representations or social ontologies while they also open up different epistemologies (Bruner 1991:15). In the light of a Foucauldian approach, they represent ‘enunciative modalities’ (Fairclough 1993:43) or principles and practices responsible for the arrangement and dissemination of knowledge and thinking. As systematised and formalised guiding principles (Harré/Brockmeier/Mühlhäusler 1999:93), conventional metaphors play a “[...] central role in defining our everyday realities [...]” (Lakoff/Johnson 1980:3) and as most of them are so profoundly naturalised *within* a particular culture (Fairclough 1993:195) they represent a system of thought and acting within rather than independently of discourse. This means that domains of discourse or discursive formations rely on metaphorical networks or models (Döring 2005:119) which “[...] can be described as a principle of arrangement and diffusion of knowledge [...]” (Maasen/Weingart 2000:21). Hence, metaphorical networks highlight historically established connections between social, cultural and political entities and the aim of DA is to make these connections visible and to expose their political or bioethical power (Fairclough 1995:747).

This type of research is not only concerned with epistemological issues (perception or framing) but also with ontology (process), in the sense of constructing worlds. From this point of view DA, the analysis of metaphor and Actor Network Theory (ANT) clearly overlap, as all three investigate “how particular realities get made and remade [...] [and M.D./J.Z.] how they sometimes, possibly often, get themselves embedded so that they become obdurate and resistant” (Law 2004:2).

In the context of SCR three questions need to be answered: how are ECS represented, how are these representations justified and what is their contribution to understanding the generic concept of ‘the human’. Our assumption is that social communication uses a concept of the human that is not ‘given’ in an absolute sense, but is a flexible discursive construct in which natural and cultural knowledge interact.<sup>11</sup> This is the reason why making decisions about SCR is so complicated. We thus decided to investigate the news coverage on ESCs in order to trace

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<sup>11</sup> See for a comparable perspective – but on BSE – Hinchliffe (2001:182-183).

their use in discursive practice. ESCs, in this sense, are epistemic things<sup>12</sup> which generate and ‘articulate’ an assembly or metaphorical network of ‘governmentality’ and governance of ‘men’. These “sticky”<sup>13</sup> metaphorical networks connect individual bodies to abstract communities and techno-scientific innovations that constitute and arrange the socially contested field of SCR.<sup>14</sup>

In the following sections we will first try to summarise briefly the national ESC discourses in France and Poland and then try to unravel the different metaphorical ‘articulations’ using an onomasiological framework (Jäkel 2003:131-145). An onomasiological approach investigates the diversity of linguistic expressions or lexemes used to conceptualise a certain domain of discourse, in our case ESC discourse, and tries to identify the metaphoric-discursive matrices of the ESC issue in two national newspapers.

### **3. Stem cell research in Poland and France: Some background information**

In Poland, human embryonic stem cell research is illegal. Poland and Latvia are the only two of the 10 new EU member states with such a restrictive legislation. The restrictive legislation in Poland surely needs to be understood in the context of the importance that the Roman-Catholic church has in the country. Pope John Paul II was an important authority in Poland, and the Vatican strictly rejects embryonic stem cell research, promoting instead the scientifically contentious alternative of research on adult stem cells. Of course, as in any post-modern society, public discourse in Poland is a cluster of competing voices. Two clearly distinguishable groups within Poland claim to represent the Roman-Catholic standpoint. These can be called the ‘liberal catholics’ and the ‘national catholics’. Both have emerged out of the *Solidarity*-movement which lay at the foundations of democratic Poland. However, the ‘national Catholics’, who merge a conservative reading of Catholic values with classic right-wing political stances including antisemitism, xenophobia and, more generally, ‘anti-minoritism’, have become a strong political force only recently. Other voices that are

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<sup>12</sup> We here make reference to Rheinberger’s (1997:28) notion of epistemic things. He stresses that these are not simply matters or pre-existing things which could be brought to light but only produced entities.

<sup>13</sup> We put an emphasis on the literal meaning of articulation (articulus=connecting) which is essential for setting up networks and which – metaphorically speaking – designates the “[...] clinging stickiness of the construed web of relations” (Law 2004:3).

<sup>14</sup> See Wodak (2002:21-22): “As institutionalized and conventionalized speech mode, discourses express societal power relations, which in turn are impacted by discourses. This “overall discourse” of society, which could be visualised as a *diskursive Gewimmel* [...] becomes comprehensible in different discourse strands (composed in fragments from the same subject) at different discourse levels (science, politics, media and so on). Every discourse is historically embedded, and has repercussions on current and future discourse.”



important in contemporary Polish public discourse are the post-communists and, for the past 15 years, a small but influential liberal ‘intelligentsija’, including well-known figures such as Adam Michnik or Bronislaw Geremek. Adam Michnik is also editor of the largest Polish daily newspaper, the liberal *Gazeta Wyborcza*. However, advocates of any political scene, how ‘secularised’ they may be, are usually well advised not to blatantly reject a position that is endorsed by the – until recently – Polish Pope, and accordingly no strong views on legalising stem cell research are brought forward.

The situation in France is quite different from that in Poland as the French discourse on biotechnology and biomedical issues started as early as 1983 with the creation of the “*Comité Consultatif National Éthique pour les sciences de la vie et de la santé*” (CCNE). The CCNE<sup>15</sup> is the outcome of the “*Institut National de la Santé et de la Recherche Médicale*” (INSERM) and represents the first ethics council in the world created in reaction to the birth of the first IVF baby a year before. Moreover, France was one of the first European states to pass legislation on bioethics in 1994<sup>16</sup> regulating problematic domains of biotechnology and genetics including research on human embryos. All this was primarily the outcome of a policy directed by the French president François Mitterrand who proclaimed a need for bioethics legislation as a primary target for the French parliament in 1993. Mitterrand (1985:5) himself expressed his motivation for setting up the CCNE by referring to the important role France had been playing in Europe since the 18<sup>th</sup> century in regulating new technologies and ideas on a free and democratic basis. However, a need for change in the bioethics legislation occurred in 1999 when Minister President Lionel Jospin presented his “*avant projet*” in which he publicly proposed a revision of the bioethics legislation stemming from 1994. At the same time, in November 1999, a study provided by the “*Conseil d’État*” (1999) on the revision of the bioethics legislation was passed by the French parliament which invited a scientific and public discussion on topics such as research on ESCs, therapeutic and reproductive cloning.<sup>17</sup> During that time article L.1245-3 forbade harvesting human embryos from ESCs while allowing the cultivation of stem cells from spare embryos (IVF). The law did not mention explicitly the hot topic of cell nuclear transfer (CNT) or cloning and Jospin’s “*avant-projet*”

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<sup>15</sup> The CCNE is an interdisciplinary commission with 41 members who are nominated by the president of the French republic and who belong to the most relevant philosophical, clerical and scientific disciplines. Their main function is to consult the president and the parliament and provide information to the general public during the annual hearings. See also Maio (1995).

<sup>16</sup> See *lois* no. 1994-653 and 1994-654 which should be reviewed after a period of four years.

<sup>17</sup> See also the *Bureau du Parlement* (2000) and its “Rapport sur le clonage, la thérapie cellulaire et l’utilisation thérapeutique des cellules embryonnaires”

did not either. But during the *Journées de bioéthique* organised by the CCNE a year later, Jospin pledged support for research on IVF embryos cultivated by CNT but avoided the use of the phrase therapeutic cloning – even if allusion was clearly made to this aspect. In sum, Jospin underlined that reproductive cloning is forbidden, that stem cells could be derived from human embryos up to the 14<sup>th</sup> day stage (as first stipulated in the Warnock report, 1985) (and these ESCs might only be used for therapeutic purposes) and that ESCs should be only taken from spare embryos. The latter aspect was emphasised by Jacques Chirac during the “*Biovision*” in Lyon 2001. Chirac stressed – with reference to the 1994 bioethics legislation – the strict prohibition of generating embryos for scientific research or purposes (Holdegger 2001:294). Since then the public debate on therapeutic cloning (*clonage thérapeutique*) conceived simply as reproductive cloning has – more or less – divided the French society, its scientific community and political and administrative bodies. In addition to this, the argument continued about the possibilities of creating human embryos using the possibility of CNT for therapeutic purposes.<sup>18</sup> A very thin majority (14 to 12 votes) agreed on the 18<sup>th</sup> of January 2001 that therapeutic cloning should be possible, while the “*Commission Nationale des Droits de l’Homme*” disagreed only 7 day later. Finally, in August 2004 the new version of the bioethics law (*loi* no. 2000-800) was passed: “It prohibits human embryo research but includes derogation for five years allowing for research on supernumerary embryos including the procurement of hEC [human embryonic cells; M.D./J.Z.] [...]” Moreover, therapeutic cloning for research and commercial or industrial purposes is forbidden and reproductive cloning is considered to be a crime against mankind<sup>19</sup>. Since then a public debate on therapeutic cloning went on and therapeutic cloning proved to be a controversial topic. Yet, the institutional, scientific and public discourses helped to conceptualise and regulate scientific progress and its possible aftermath – eventually – lead to the 2004 regulation on therapeutic cloning.

This impressionistic overview suggests that quite fundamental differences exist between Poland and France concerning the contexts in which discourses on stem cell research develop. In France, ESCs seems to have been discussed initially in the context of scientific progress,

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<sup>18</sup> The debates of the CCNE members about therapeutic cloning by using CNT activated well know argumentative lines. The Cons used arguments such as the danger of reification, miss use and economic miss use while the Pros clearly made reference to people suffering incurable diseases. See also Viville/Ménézo (2002:262): “By refusing human embryo research we put ourselves in a position of scientific, technological and financial dependence upon the countries who have accepted the principle of human embryo research. Such a situation may result in another ethical concern, since it may mean that we are unable to offer certain treatments to patients because research on human embryos has been forbidden.”

<sup>19</sup> Human cloning is punishable with 30 years of imprisonment and 7,5 million Euros fine.

from a positivistic perspective informed by the tradition of enlightenment. Legislation, since then, has tried to find a balance between the pursuit of scientific progress and ethical considerations. In Poland, on the other hand, a less liberal climate towards this particular field of scientific innovation seems to have been the basis for legislation. This very careful approach to research on ESCs might be related to the sceptical attitude of the Vatican, a very important voice in Polish public discourse, towards research on ESCs.

In the following we turn first to the investigation of the metaphors used in Polish media discourse on ESCs in the *Gazeta Wyborcza*, and then to an analysis of the metaphorical networks in *Le Monde* which is one of the leading newspapers in France.

#### 4. The coverage on ESCs in the *Gazeta Wyborcza*

The largest Polish newspaper, the *Gazeta Wyborcza*, is not overtly associated with any political standpoint in particular. In general, this newspaper is a venue for views ranging from the secularist-liberal scene on the ‘left’ to the liberal versions of Catholicism on the ‘right’. The coverage of the *Gazeta Wyborcza* in the years 1998-2000 consists of 43 articles that include the term *stem cells* (*komorki macierzyste*, literally: *mother cells*). In 1998, only 3 articles were published, while in 1999 15 articles appeared, and the coverage in 2000 consists of 25 articles. All these articles appeared in five different sections of the newspaper (see table 1): ‘Page 1 article’, ‘topic of the day (page 2)’, ‘report’, a long, case-study-type of text, ‘international news’, and the section on ‘science’.

Year	Page 1	Topic of the day	Report	International news	Science
1998	1	-	1	-	1
1999	2	-	-	-	13
2000	3	1	-	1	20

**Table 1: Number of articles on stem cells in different sections of the paper.**

As Table 1 shows, the bulk of the coverage on stem cells is relegated to the science section, which surely is the one out of the five sections least read by the average reader. The table also shows that the topic has been increasingly deemed worthy of page 1 coverage, although it would be an exaggeration to speak of an explosion in interest for this period of time. This leads us to the conclusion that the topic is not high on the agenda but still is a newsworthy

topic which has its continuous coverage in a special section and therefore could be considered as attracting a constant or stabilised interest.

The coverage of the *Gazeta Wyborcza* starts with an article stemming from the 1<sup>st</sup> of November 1998 in which the merging of human somatic cells with bovine egg to produce human ESCs is outlined. It has the double title:

(1) “*Fabryka ludzkich tkanek – krowoczłekoupiór*”<sup>20</sup> (*Gazeta Wyborcza*, 14.11.1998,1).

Factory of human tissue – *cowmanvampire*<sup>21</sup>

The second component of the title in particular displays an initial reaction dominated by fear rather than curiosity. The word creation *cowmanvampire* reflects the creation of a new, ‘mixed’ creature or chimera to be expected from over ambitious scientists. The invocation of horror story creatures (*upiór* in this case) and the interpretation of scientific advances as horror fiction bear similarities to other public reactions connected to the dangers of modern biotechnology (Nerlich/Clarke/Dingwall 2001, Nerlich/Hamilton/Rowe 2002, Nerlich/Clarke Dingwall 2000). The article is unequivocal in its condemnation of the reported news: It presupposes an alleged ‘storm’ caused by this news – this metaphor is significant in so far as the word for storm (*burza*) is the stem of the word for outrage (*oburzenie*). It undermines the authority of the US company ACT (Advanced Cell Technology), which had produced the cells, by calling it ‘unknown’, thereby adding to the image of ‘spookiness’ and lack of responsibility. It contains an upfront condemnation of the event by Jeremy Rifkin, a famous critique and commentator, introduced as “adept in biotechnology”. Finally, the last sentence of the article draws attention to the problem that genetic information ‘coming from the cow’ would also be involved. The term ‘stem cells’ is introduced in quotation marks in the middle of the article.

The following metaphor source concepts are used in this article:

Vampire for *a future and threatening creature*;

*Factory* for research institution;

*Storm* for outrage;

*Small lump/heap (grudka)* for the cell material.

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<sup>20</sup> The *upiór* is a specifically Slavonic creature that blends the physicality of the *vampire* with the spookiness of the *ghost*. For lack of a better translation we gloss it as *vampire*.

<sup>21</sup> All translations are supplied by M.D./J.Z. and cross-checked by native speakers from the Institute for the Study of Genetics, Biorisks and Society (University of Nottingham) and the Department of Psychology (University of Portsmouth).

The expression *grudka* (small lump/heap) for the cell material is particularly interesting. Indeed, the target concept is hard to conceptualise for a lay person. The idea of a *grudka* is used in a sentence which explicitly denies that the material that has been worked with is a ‘*ludzki zarodek*’ – a human embryo. However, it is difficult to express in language something that cannot be measured by the human eye. Thus the spatialising quality of natural language semantics (Jackendoff, 1994) makes a *lump/heap* – a mass that is tangible and sizable – out of ungraspable or invisible cell-material.

- (2) “Autorzy eksperymentu podkreślają, że owa **grudka** to nie ludzki zarodek, lecz tylko ‘grupa komórek macierzystych’ - takich, z których mogą powstać dowolne tkanki i narządy” (*Gazeta Wyborcza*, 14.11.1998,1).

The authors of the experiment underline that this **small heap** is not a human embryo, but only a ‘group of stem cells’ – cells that can become any tissue or organ.

In the following section, the material is referred to as “the mass of stem cells”. Interestingly, the page 1 articles published in 1999 sound quite different from this first one and one could – perhaps – speak of an evolving textual linguistics. The first of these (article 2), published in January 1999, not too long after the previous article, has the title “we will be cloning people”, an adapted quote from Ian Wilmut, the ‘father’ of the sheep Dolly. The article is built around Wilmut’s change of mind, from cloning ‘only’ animals to trying to clone people.<sup>22</sup> However, the tone of the article is largely apprehensive. This is especially apparent in the closing section, where cloning is referred to as the ‘great hope of medicine’, and an assertion is made that cloning supposedly has lost its ‘horrors’ for the observing society:

- (3) “O klonowaniu przestaje się powoli mówić jak o **horrorze** czy o fanaberii. Na hodowanie ludzi specjalnie po to, by wyjąć z nich serce bądź nerkę, czy na kopiowanie wybranych świat nauki nigdy by się nie zgodził” (*Gazeta Wyborcza*, 21.1.1999,1).

People slowly stop talking about cloning as a **horror story** or a crazy idea. The cultivation of people specifically in order to take their heart or kidney out of them, or the copying of selected people would never be approved by the world of science.

The term *cloning* is used here for the first time in the context of research on embryonic stem cells. The following metaphors are used in this article:

*Copying* for cloning;

**Small heap** for cell material.

The style of the article differs considerably from that of the first one, conveying a sense of curiosity rather than anxiety. The article is kept in a dialogical form, with ‘preemptive’

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<sup>22</sup> Ian Wilmut recently resigned to do any human reproductive cloning.

questions ('so where do we get these stem cells from?') alternating with answers. Of interest is also the formulation that scientists can now 'keep stem cells alive', which explicitly categorises stem cells as a form of life, with all the potential ethical consequences. Importantly, the metaphor of cell material as a *grudka* – a small heap – seems to have caught on, whereas the metaphors with a clearly negative connotation used in the first article, such as the "factory of human tissue", do not reappear.

Article 3, published on 29<sup>th</sup> June 1999, is a brief text announcing a report in the science section. Its title is 'Complete overhaul of the brain'. It reports the application of stem cells to produce new nerve cells in mice's brains. Also, in the first section it mentions the potential implications of this progress for the treatment of Multiple Sclerosis (MS) patients. The article is written in a rather enthusiastic tone.

The following metaphors are used:

***Overhaul (generalny remont)*** for recovery

***Revolution*** for scientific experiment

Here we see a continuation of the development of the discourse into a more positive, even enthusiastic, direction. The metaphor of the "revolution" brings the discourse of the *Gazeta Wyborcza* closer to that described for *Le Monde* (see the following chapter).

Article 4, published on 4<sup>th</sup> January 2000, has the title "break-through (*przełomowe*) achievement – eye and ear out of the test-tube". It relates the cultivation of frogs' eyes and ears from embryonic stem cells by Japanese scientists – the first case in which whole organs had been produced. Again, the potential significance for replacing sensory organs in humans is outlined.

As the title indicates, the text is again rather positive and embracing in tone.

Metaphors used are:

***Break-through (przełom)*** for the experiments significance;

***Small heap*** for the set of cells;

***Glue together (zlepiać)*** for achieving a fusion of tissues into an organ.

Something that could be called a 'constructional metaphor' (carrying over the syntax associated with one domain to another) is used in giving a recipe on 'how to make a new organ':

- (4) “Wystarczyło wrzucić do probówki z roztworem kwasu retinowego **grudkę komórek**, poczekać pięć dni - i gotowe. Gdy stężenie kwasu było niższe - powstawały oczy, gdy wyższe - rozwijały się uszy” (*Gazeta Wyborcza*, 4.1.2000,1).

It was enough to throw into the test-tube together with an acid solvent a **small heap** of cells, wait five days – and ready. When the acid concentration was lower – eyes developed, when it was higher – ears developed.

Again, the metaphor of the “*small heap*” is used in this article.

Article 5, from 17<sup>th</sup> March 2000, is again an announcement of a report in the science section, mentioning the existence of stem cells in the human eye, and the implication that this could lead to the possibility to heal cases of blindness. The title, “On the eye – success” is a word-play, the idiom ‘on the eye’ (*na oko*) meaning something like ‘apparently’.

Article 6, from 16<sup>th</sup> August 2000, is a very brief text with the title “nerves of marrow” – again possibly a word-play on “nerves of steel”. It reports that nerve cells had been cultivated from humans’ and rats’ bone marrow. It then calls this a breakthrough for the perspective to help people with neurodegenerative diseases such as Alzheimer and Parkinson’s disease.

*Break-through* for scientific achievement is the only metaphor used. This metaphor again shows that the discourse of the *Gazeta Wyborcza* is embracing stem cell research and the potential it has for medical innovation, rather similar to the discourse in *Le Monde*.

In summary, stem cell research is conceptualised in different ways in these six representative articles. However, an evolving trend or position is discernable. Whereas the first article from 1998 is clearly sceptical in tone, the general line later adopted in the *Gazeta Wyborcza* seems to be very much one that embraces the aspect of progress in the field of stem cell research, including research on embryonic stem cells. Only the initial realisation of the new possibilities brought by the discovery of stem cells triggered a ‘horrified’ reaction.

Moral arguments, or arguments pointing to local traditions such as the Roman-Catholic tradition, are hardly brought into the discussion explicitly. The coverage is surprisingly utilitarian in character: The rhetoric in general is used to answer the question what will this research do for us? Only one out of the 43 texts links the topic of stem cell research with the Vatican’s position – this is the text from the ‘international news’ section, published in August 2000, making reference to the fact that John Paul II. had spoken to an audience of transplantologists and expressed his rejection of any ‘cloning of human embryos’. Although the text is very brief, it brings a range of different issues into the context of SCR. The most obvious is the pope’s suggestion to use adult stem cells for research purposes and it also mentions the pope’s encouragement to become an organ donor. There is no commentary from

the journalist that would give a qualifying assessment of organ donation and research on adult stem cells as alternatives to research on embryonic stem cells.

An intriguing link between SCR and religious values is made in one of the later texts from the science section from 2000. The article about possible advances in the treatment of stroke patients links these perspectives to fragments of the Bible by citing passages in which healing wonders are reported:

- (5) *“A tłumy zdumiewały się, widząc, że niemi mówią, ułomni są zdrowi, chromi chodzą, niewidomi widzą. (Ew. wg św. Mateusza 15, 31).*

Czy słowa ewangelisty mają szansę się spełnić? Dziś szanse na to są większe niż kiedykolwiek.” (*Gazeta Wyborcza*, 23.8.2000, nauka, 9)

*“And the people were amazed as they saw that the mute could speak, the weak were healthy, the invalids could walk, and the blind could see (Gospel after St Mathew 15, 31)*

Is there a chance for the words of the evangelist to be fulfilled? The chances are better today than at any previous time.”

As shown in Table 1, the majority of articles on SCR in the *Gazeta Wyborcza* appeared in the ‘Science’ section. When SCR is first mentioned in the science section in 1998, it is not as a topic in its own right, but as an aspect mentioned in the context of more general topics such as transplantation. When SCR gets into the focus of reports in the science section, the rhetoric is clearly geared towards an imagery that underlines the added agency that SCR could give to humanity in addressing the frailties of the human body. A RATIONAL perspective (Baranov/Zinken 2003) becomes very clear in an article that is built on the metaphor which aligns human organs with parts of a car. If each human is like a unique car model, getting spare parts becomes a problem – a problem that SCR can address:

- (6) *“Ciało ludzkie można z grubsza przyrównać do **samochodu** wyprodukowanego w jednym tylko egzemplarzu, którego twórcy zapomnieli o **częściach zamiennych**. Kiedy coś się w nim zepsuje - wtedy staje. By przywrócić mu sprawność, trzeba zastąpić uszkodzone elementy nowymi. Ale skąd je brać? Owszem, można wykręcić z innego samochodu. Tyle że nie mamy gwarancji, iż będą pasowały. Podobnie jest z transplantacją ludzkich narządów” (*Gazeta Wyborcza*, 26.01.1999, nauka, 12).*

*“The human body can roughly be likened to a car that has been manufactured in one exemplar only, and whose maker forgot about the **spare parts**. When something breaks – it can’t run. To get it repaired, the broken elements have to be replaced with new ones. But where to take them from? Of course, one could take them out of another car. But there is no guarantee that they will fit. It is similar with the transplantation of human organs”.*

However, the discourse on stem cells in the science section is not exclusively rationalist and ‘sober’. The one emotive key-word that is used repeatedly is “hope”. *“Cells of hope”* is –



similarly to *Le Monde* – a catch-phrase that is used as a headline, and a report on the “scientific top ten” published by *Science Magazine* at the end of 1999 justifies the inclusion of stem cells at the top of that list with the fact that they had “fulfilled the hopes” they had awoken.

Interestingly, the two main conceptions or the dichotomy of SCR as a horrifying danger vs. SCR as a great hope seem to be the same as in other European countries, not only in content but also in form: The sceptics use fiction-imagery to convey their sense of horror while the optimists use “rationalist” imagery to convey the sense of human agency in designing a better future. This image of the body as a construction, where parts can be exchanged like the broken parts of a lawnmower, can be used by both groups due to its ambiguity. Further to its use as a RATIONAL metaphorical model that profiles the ‘makeability’ of the world (Baranov/Zinken 2003), it can also be profiled as a MECHANISTIC model, critically juxtaposing the idea of mass or assembly line production with the uniqueness of the human being. This idea seems to be expressed by the ‘factory’-metaphor in article 1.

## 5. The coverage of ESCs in *Le Monde*

*Le Monde* is one of the most prominent French newspapers, well-known for its politically balanced left-liberal coverage. As a quality newspaper it could not be associated with a particular opinion on SCR and a close look at the coverage on ESCs proves this fact: Emphasis is put on topics such as the French bioethical discussion and – mainly – on recent advances in SCR. Besides these main strands, some articles refer to the permissive situation in Great Britain, the bioethical discussion on SCR in the US and the attempts within the European Union to define a regulative or even legal consensus for SCR within Europe. The coverage of *Le Monde* in the years between 1998 and 2000<sup>23</sup> consists of 63 articles which were accessed using CD-ROMs<sup>24</sup>: 7 articles were published in 1998, 26 articles appeared in 1999 and in 2000 30 hits could be found. Most of the articles are long texts that occurred in four different sections (front page, ‘report’ section, ‘international news’ section and science) investigating in depth a current aspect of the topic. As the Table 2 shows, the bulk of the

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<sup>23</sup> We chose this period of time as two papers describing the *in vitro* growth of human embryonic stem cells appeared in 1998. The investigated coverage thus comprises a period from October 1998 to December 2000.

<sup>24</sup> We used the search engine available on the CD-ROMs trying to employ a vocabulary which comprises the discursive domain of SCR best and offers the most hits available. The list of keywords contains the following lexemes and composite: *Clonage*, *Clonage embryonnaire*, *clonage thérapeutique*, *clonage humain thérapeutique*, *fécondation in vitro*, *cellules-souches*, *cellules souches*, *cellules souches embryonnaires*, *embryons humains congelés*, *embryons surnuméraires* and *débat bioéthique*.

coverage on ESCs is – like in the *Gazeta Wyborcza* – relegated to the science section which might be the one out of the four sections read least by the reader.

Year	Page 1	Report	International news	Science
1998	2	3	-	2
1999	3	2	6	15
2000	4	6	7	13

**Table 2: Number of articles on ESCs which appeared in different sections of *Le Monde*.**

Nevertheless, one has to keep in mind that during the period of investigation a debate on SCR and the change of the bioethics legislation took place in France which might have lead to an increase of the readership of the science section – some of the articles were even cross referred to so that a kind of ‘chained reading’ might have occurred.<sup>25</sup>

The stem cell coverage of *Le Monde* starts with an article on the 1<sup>st</sup> of October and accelerates on the 7<sup>th</sup> November 1998 announcing that in an article in *Science* dating from the 6<sup>th</sup> November 1998 (written by A. Thomson and Jeffrey M. Jones from the University of Wisconsin) the first derivation of embryonic stem cell lines had been announced.<sup>26</sup> Right from this initial article the onwards the coverage of *Le Monde* uses well known (Döring in press) spatial metaphors to conceptualise the relevance of scientific research and the development of a new kind of biology or embryology. First of all, the ‘stage’ concept is often used as source domain such as in

- (7) “*Une étape fondamentale* dans la maîtrise du vivant *vient d’être franchi...*” (*Le Monde* 7.11.1998,1).  
(A fundamental stage is achieved in ...)
- (8) “Une nouvelle *étape est franchie* dans la maîtrise du vivant” (*Le Monde*, 19.11.1998,28).  
(A new stage is crossed...)

At this initial point, the stage metaphor is backed up by the field- or domain metaphor which stresses the impact of this research on embryos as a source to generate ESCs:

<sup>25</sup> We would like to stress that such aspects have to be treated with great care because we know nothing precise about the readership in its everyday practices of reading *Le Monde*. Nevertheless, the table shows that ESCs are a newsworthy topic but that most of the discussion is provided in the science and report section.

<sup>26</sup> The quotes taken from *Le Monde* are representative examples from the corpus.

- (9) “Les recherches pouvant être conduits **le champ de l’embryogenèse** et du développement peuvent avoir une importance considerable [...]” (*Le Monde* 7.11.1998,29).

(The possible research done in the field of the development of the embryo...)

- (10) “C’est tout un **nouveau champ de recherche** qui s’est ouvert.” (*Le Monde* 29.4.1999,14).

(It is a newly opened field of research)

Besides these typical metaphors that describe the new area of research and indicate a direction to follow, other spatial or spatially related metaphors occurred in the French debate about therapeutic cloning. This is the case in the following quotes where the development of new therapies and drugs against cancer is metaphorically conceptualised as a path leading to useful medical interventions:

- (11) “Elle **ouvre la voie à une nouvelle approche thérapeutique des cancers** par inhibitions de la téloméase” (*Le Monde* 29.9.1999,29).

(It opens a path towards new attempts providing therapies for cancer...)

- (12) “Le gouvernement a ouvert **une voie** dont l’avenir dira si elle avait une utilité” (*Le Monde* 7.11.2000,1).

(The government opened a path which has to prove its utility in the future)

But therapeutic cloning could also be conceptualised by using an ontological metaphor where SCR is seen as a building containing doors which could be opened by proponents (or shut by opponents):

- (13) “[...] Lionel Jospin **a ouvert la porte au clonage thérapeutique** humain, dans sa presentation [...]” (*Le Monde* 7.12.2000,1).

(Lionel Jospin opened the door for therapeutic cloning during his presentation...)

Other culturally embedded metaphorical schemas, such as traffic signals are also employed to frame SCR:

- (14) “C’est [avant-projet de Jospin ; M.D./J.Z.] **le feu vert à ce que l’on appelait le clonage thérapeutique**” (*Le Monde* 22.12.2000,3).

(That’s the ‘green light’ to what one calls therapeutic cloning)

One main topic in the coverage is the fight against incurable illnesses such as Alzheimer’s disease, Diabetes, Huntington’s disease or cancer. These prototypical diseases indicate the probable field of application of SCR but at the same time create a discourse where such diseases are framed as a potential threat (Beck-Gernsheim 2001:24) to which research on stem cells provides – metaphorically speaking – a remedy. This aspect is expressed via fight metaphors such as in the following quote

- (15) “[...] produire des cellules et des tissus susceptibles d’être transplantés ***pour lutter contre de nombreuses maladies***” (*Le Monde* 25.8.2000,7).

[...] to produce cells and tissues which can be transplanted to fight against numerous diseases)

SCR – as a part of genetics – can therefore also become a weapon:

- (16) “La génétique, ***future arme*** contre l’insuffisance cardiaque” (*Le Monde* 15.11.2000,29).

(Genetics, a future weapon against heart failure)

Furthermore, the potential therapeutic and economic benefits are metaphorically conceptualised through broader visions, as illustrated in the following quote:

- (17) “Cette première, très attendue dans les milieux internationaux de la biologie, ouvrait des ***vastes perspectives thérapeutiques et industrielles***” (*Le Monde* 22.1.1999,2).

(This premiere for which the international research community in biology had been waiting desperately, opened up great therapeutic and industrial perspectives)

- (18) “Parce qu’elles [cellules embryonnaires ; MD/JZ] sont aussi susceptibles de se transformer en différents tissus constituant l’organisme humain, ces lignées de cellules ***ouvrent de considérables perspectives thérapeutiques dans le domaine de la pharmacologie*** aussi bien que de la thérapie cellulaire” (*Le Monde*, 7.11.1998,28).

(These embryonic stem cell lines are also able to develop into every kind of tissue generating human body cells and they open therapeutic perspectives in the field of pharmacology and cell therapy.)

The economic potential of SCR is also expressed via the culturally embedded *Eldorado*-metaphor (the mysterious land of Gold in South America) with its implicit connotation of an immense benefit

- (19) “[...] pour s’engager au plus vite dans ce nouvel ***eldorado scientifique***, [...]” (*Le Monde* 16.4.1999,31).

(...to start working as soon as possible in this new scientific Eldorado, ...)

while hope for possible and ‘enlightened’ cures is expressed via light metaphors (Blumenberg 2001):

- (20) “[...] la science a mis en ***lumière les espoirs thérapeutiques*** que l’on peut attendre du clonage et de la culture des cellules de cellules embryonnaires” (*Le Monde* 17.5.2000,26).

([...] science has put the spotlight on therapeutic hopes which are connected with cloning or the cultivation of embryonic stem cells.)

- (21) “A la ***lumière de ces récentes découvertes***, le pouvoir de la génétique paraît désormais sans conteste” (*Le Monde*, 6.1.1999,12).

(In light of these recent discoveries the power of genetics seems to be incontestable.)

Metaphors such as

- (22) “[...] des cellules souches embryonnaires, **cellules de l’espérance**” (*Le Monde* 25.8.2000,7).

([...] cells of hope)

also highlight the hopes for possible cures invested in ECSs, while from a more neutral point of view they could also be framed as

- (23) “[...] **matière première** [...]” (*Le Monde* 25.8.2000,7).

([...] raw material [...])

The metaphor of ‘raw material’ was however contested by some who stressed that ECSs cannot be reduced to raw materiality but are an insipient form of life:

- (24) “S’agit-il **d’une matière première** et utilisable ou d’une personne humaine potentielle?” (*Le Monde* 29.2.2000,14).

(Is it raw material to be used or is it a potential human being?)

This dichotomy between the material and the human or the object and the subject is also explored in the following quotes where the embryo is metaphorically framed as pure therapeutic and biological matter or as a supplier of bits and pieces:

- (25) “[...] devenir source de **matériel thérapeutique**” (*Le Monde* 21.2.2000,25).

([...] become the source for providing therapeutic material.)

- (26) “Mais au prix d’un changement de statut essentiel pour l’embryon humain: de personne “potentielle”, celui-ci devient objet **fournisseur de matériel biologique**” (*Le Monde* 15.4.1999,18).

(The price is a shift of the basic status of the human embryo: From a potential person towards a supplier of biological material)

- (27) “L’embryon, **une source potentielle de “pièces détachées”**” (*Le Monde* 14.8.1999,17).

(The embryo as a potential source for detached pieces)

Quite often computer metaphors – as in the coverage of the deciphering of the human genome – occur such as the following quotes show. ESCs contain a computer programme:

- (28) “[...] l’homme est en train de changer **le logiciel de la vi.**” (*Le Monde* 12.2.1999,24).

([...] man is changing the programme/software of life)

Their inherent program (the nucleus) could be understood as software that might undergo reprogramming:

- (29) “[...] d’envisager **le développement programmé** et sous contrôle du clonage thérapeutique” (*Le Monde* 31.5.1999,21).

([...] a pre-programmed development and under the control of therapeutic cloning)

To sum up, we have seen that the discourse on ESCs in France concentrates on therapeutic cloning as the main discursive arena. Due to the relatively early creation of the French

bioethics council (CCNE), a discourse about possible biotechnological futures and threats was already well established in the public sphere. Consequently, spectacular metaphors such as Dr. Frankenstein or Dr. Moreau (for scientists) or brave new world (with all its connotations of alpha, beta and gamma human beings) are completely absent. Instead, the very moderate tone in the coverage of *Le Monde* focuses on well established metaphors which generate or blend ‘facts’ with embedded repertoires of cultural meaning: Fights only occur in the well-known framework of fighting diseases, science marches onward and future regulations are framed metaphorically by ‘way’ and ‘access’ metaphors while therapeutic and economic aspects are conceptualised by metaphors that put an emphasis on vision. Very little variation exists in the use of metaphors for ESCs and their production for therapeutic purposes by therapeutic cloning. The central problem of whether the embryo is a human being or not remains unsolved and the metaphors do not clarify this central bioethics question. Rather, they seem to provide a fundament which might have led to the temporal revision of the bioethics legacy which was ratified in 2004.<sup>27</sup> All in all, a lack of spectacular metaphors indicates that *Le Monde* seems to have seen its role in providing information for a public debate which in fact took place and led to therapeutic cloning being permitted in France under the previously mentioned circumstances.

## **6. The discursive and metaphorical crafting of ESCs in the Polish and French press: Sustaining diversity and homogeneity within a framework of ‘ethical cultures’.**

The analysis has shown that discourses on and metaphors for research on embryonic stem cells in Poland and France display broad parallels. In general, a rational perspective on the possibilities of SCR is salient in both discourses. This perspective underlines the potential of SCR of increasing human agency in addressing the ‘limited durability’ of the human body. It seems that the discursive matrices and the different metaphorical networks underlying SCR – or biotechnology more generally – have a lot in common across languages. They surely differ across cultures, but not in the sense of national cultures, but rather of ‘ethical cultures’ based in ideologically defined groups (van Dijk 1998): The discourses of French liberals and Polish liberals might be more similar than those of French liberals and French conservatives as both groups accomplished the production of discursive matrices for SCR by using common metaphors or discourse metaphors which “[...] specify the appropriate bases for the

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<sup>27</sup> The new bioethics regulation in France has a period of validity for five years. At least an initiative of revision has to be started after this period of time.

organisation and mobilisation of social life [...]” (Murdoch 1995:189). Thus bioethical SCR-networks emerge from a shared network of metaphors (part of interpretative repertoires) which themselves display or expose the microphysics of power and the ‘governmentalities’ at work in the two countries, and, perhaps, Europe as a whole. Each society and its social groups are based on different institutional domains relying on collectively shared norms, discourses and rationalities leading to a certain conduct of the individual(s): „All government depends on a particular mode of representation: the elaboration of a language for depicting of the domain in question that claims both to grasp the nature of reality represented, and literally to represent it in a form amenable to political deliberation, argument, scheming“ (Miller/Rose 1990:6) or metaphorical schematisation.

On the other hand, there are some differences between the French and the Polish discourses which can be traced to contextual differences. We analysed the emerging news discourses on SCR by outlining the socio-cultural environment and providing a detailed analysis of exemplary statements in the news coverage – an enterprise which indicates an attempt to reveal partially the archaeology of knowledge of SCR. With this attempt in mind we were able to show that the French coverage lacks spectacular or horrifying metaphors, which, by contrast, were documented for the very beginning of the coverage in the *Gazeta Wyborcza*. References to mad, ‘Frankensteinian’ scientists are simply absent in *Le Monde*, research institutes are not designated as factories and embryonic stem cells simply become *cellules souches* or *cellules embryonnaires*. Taking into account that the French news coverage relies on an already established bioethical discourse, this may not surprise, but it indicates a cultural difference that has an impact on what types of metaphors emerge. Interestingly, ESCs are not metaphorically conceptualised as heaps or stem cell clusters but a proper name is used in the French coverage from the beginning, which indicates a ‘rational’ vision. Moral arguments also exist but the already well-established bioethical discourse in France – which determines types of discourse metaphors that evolve – seems to have had an impact on the framing. It seems that the cultural background for framing contested technologies such as research on ECSs affects the use of metaphor even though both countries rely theologically on Roman Catholic philosophies which are however mitigated in France by a ‘rational’ understanding that has its roots in 18<sup>th</sup>-century enlightenment philosophies. On the other hand, the data suggest that local cultural backgrounds can be ‘adjusted’ to fit the perspective that the speaker chooses to convey. Whereas the catholic dimension of Polish public discourse can be used to argue against SCR from a more conservative perspective, it can also be used as a common ethical background that makes the scientific pursuit of a better life for the weak an imperative.

This underlines – again – that just “informing the public is not enough: We need to learn to listen to concerns expressed and to respect the diversity of ethical values and beliefs, which characterize Europe” (Joliff-Botrel/Matthiessen 2001: 12). The analysis of metaphorical frameworks and metaphorical schematisation in discourses on ECSs provides a useful first step towards uncovering and sustaining the diversity as well as the homogeneity of ethical values and beliefs towards research on ESCs throughout Europe. It uncovers the mechanisms that regulate ethical values in the realm of ESC-biopolitics.

## References

- Albrecht, S. et al. (edd.): *Stammzellenforschung. Debatte zwischen Ethik, Politik und Geschäft*, Hamburg.
- Alison, M. R./Poulsom, R./ Forbes, S./ Wright, N.A. (2002): „An introduction to stem cells“, in: *Journal of Pathology* 197, 419-423.
- Baranov, A./Zinken, J. (2003). „Die Metaphernstruktur des öffentlichen Diskurses in Russland und Deutschland: *Perestrojka*- und *Wende*-Periode“ in: Symanzik, B., Birkfellner, G. & Sproede, A. (eds.), *Metapher, Bild und Figur. Osteuropäische Sprach- und Symbolwelten*, Hamburg, Verlag Dr. Kovac, 93-121.
- Beck-Gernsheim, E. (2001): „Die soziale Konstruktion des Risikos – das Beispiel Pränataldiagnostik“, in: Geyer, Chr. (ed.): *Biopolitik. Die Positionen*, Frankfurt am Main, 21-40.
- Bender, W./Hauskeller, Chr./Manzei, A. (2005) (edd.): *Crossing borders. Grenzüberschreitungen. Ethical, legal, economic and religious views on stem cell research. Global perspectives*, Münster.
- Biesboer, F. (2003): *Genomic dreams, fears and phantasies: Public embedding of genomics research*, The Hague.
- Blau, H. M./Brazelton, T.R./Weimann, J. M. (2001): „The evolving concept of a stem cell: entity or function“, in: *Cell* 105, 829-841.
- Blumenberg, H. (1999): *Die Lesbarkeit der Welt*, Frankfurt am Main.
- Bruner, J. (1991): „The narrative construction of reality“, in: *Critical Inquiry* 18, 1-21.
- Bureau du Parlement (2000): *Rapport sur le clonage, la thérapie cellulaire et l'utilisation thérapeutique des cellules embryonnaires*, No. 2198, Paris.
- Calsamiglia, H./van Dijk, T.A. (2004): „Popularization discourse and knowledge about the Genome“, in: *Discourse and Society* 15, 369-389.
- Carcarelli, L. (2002) *Rhetoric and the field of Human Genomics: The problems and possibilities of mixed metaphors* (Draft).
- [http://www.gene-sis.net/essays/ceccarelli\\_essay.pdf](http://www.gene-sis.net/essays/ceccarelli_essay.pdf) [accessed 14.11.2003]
- Chouliaraki, L./Fairclough, N. (1999): *Discourse in late modernity. Rethinking critical discourse analysis*, Edinburgh.



- Conseil d'État (1999): *Les lois de bioéthique: cinq ans après. La documentation française*, Paris.
- van Dijk, T. (1998). *Ideology: A multi-disciplinary approach*, London.
- Döring, M. (in press.): „A sequence of 'faitiches': The genetic code goes public“, in: Kidd, K./Nerlich, B.: *The new genetics: Linguistic and literary metaphors and the social construction of the genome* (special issue of *New Genetics and Society*).
- Döring, M. (2005): „*Wir sind der Deich*“: *Die metaphorisch-diskursive Konstruktion von Natur und Nation*, Hamburg.
- Döring, M./Nerlich, B. (2004): „Die metaphorisch-kulturelle Re-Modellierung des Menschenbildes: Die kommunikativen und kognitiven Dimensionen der deutschen und englischen Stammzellendebatte“, in: *Zeitschrift für Biopolitik* 2, 17-29.
- Donaldson Report (2000): *Stem cell research: Medical progress with responsibility* [=Department of Health], London.
- Evans, J. H. (2002). *Playing god?: Human genetic engineering and the rationalization of public bioethical Debate*, Chicago.
- Fairclough, N. (1989): *Language and Power*, London, New York.
- Fairclough, N. (1993): *Discourse and Social Change*, Cambridge.
- Fairclough, N. (1995): *Media Discourse*, London.
- Foucault, M. (1974): *Die Ordnung der Dinge*, Frankfurt am Main
- Foucault, M. (1969): *L'archéologie du savoir*, Paris.
- Foucault, M. (1976): *Mikrophysik der Macht*, Berlin.
- Foucault, M. (1979): „On government“, in: *I and C* 6, 5-22.
- Foucault, M. (1989): *Der Wille zum Wissen*, Frankfurt am Main.
- Goodman, A./Heath, D./Lindee, M. S. (2004) (edd.): *Genetic nature/culture. Anthropology and science beyond the Two-Culture Divide*, Berkeley.
- Green, R. M. (2001): *The human embryo research debates in the vortex of controversy*, Oxford.
- Hellsten, I. (2002): *The politics of metaphor. Biotechnology and biodiversity in the media*, Tampere.
- Holland, S./ Lebracqz, K./ Zoloth, L. (edd.) (2001): *The human embryonic stem cell debate: Science, ethics and public policy*, Cambridge Mass.
- Habermas, J. (2001): *Die Zukunft der menschlichen Natur. Auf dem Weg zu einer liberalen Eugenik?*, Frankfurt am Main.
- Halliday, M.A.K. (2001): „New Ways of Meaning. The Challenge to Applied Linguistics“, in: Fill, A. / Mühlhäusler, P. (edd.) (2001): *The Ecolinguistics Reader. Language, Ecology and Environment*, London, 175-202.
- Harré, R./Brockmeier, J./Mühlhäusler, P. (1999): *Greenspeak. A Study of Environmental Discourse*, London.
- Harrington, A. (1995): „Metaphoric Connections: Holistic Science in the Shadow of the Third Reich“, in: *Social Research* 62/2, 357-385.

- Hauskeller, Chr. (Ed.) (2002a): *Humane Stammzellen. Therapeutische Optionen – ökonomische Perspektiven – mediale Vermittlung*, Lengerich.
- Hauskeller, Chr. (2002b): „Bedeutung erzeugen oder neutralisieren – Die Macht der Sprache“, in: Hauskeller, Chr. (Ed.) (2002a): *Humane Stammzellen. Therapeutische Optionen – ökonomische Perspektiven – mediale Vermittlung*, Lengerich, 230-237.
- Hauskeller, Chr. (2004a): „Stammzellenforschung und Menschenwürde“, in: Kettner, M. (ed.): *Biomedizin und Menschenwürde*, Frankfurt am Main, 145-171.
- Hauskeller, Chr. (2004b): „How traditions of ethical reasoning and institutional processes shape stem cell research in the UK“, in: *Journal of Medicine and Philosophy* 29/5, 509-532.
- Hinchliffe, S. (2001): „Indeterminacy in-decisions: science, policy and politics in the BSE crisis“, in: *Transactions of the Institute of British Geographers* 26/2, 182-204.
- Holdegger, A. (2001): „Embryonenforschung, Stammzellengewinnung, therapeutisches Klonen – zur politisch-ethischen Diskussion in Frankreich“, in: *Zeitschrift für medizinische Ethik* 47/3, 292-298.
- Jackendoff, R. (1994). *Patterns in the mind: Language and human nature*, New York.
- Jäkel, O. (2003): *Wie Metaphern Wissen schaffen. Die kognitive Metapherntheorie und ihre Anwendung in Modell-Analysen der Diskursbereiche Geistestätigkeit, Wirtschaft, Wissenschaft und Religion*, Hamburg.
- Joliff-Botrel, G./Matthiessen, L. (2001): *Stem cell research at European level*, 13-14 September 2001, Brussels.
- <http://europa.eu.int/comm/research/quality-of-life/stemcells/pdf/report-meeting-13-14sept2001.pdf> [accessed 22.03.2004]
- Keller, R. (2004): *Diskursforschung. Eine Einführung für SozialwissenschaftlerInnen*, Opladen.
- Kettner, M. (ed.) (2004): *Biomedizin und Menschenwürde*, Frankfurt am Main.
- Kirejczyk, M. (1999): „Parliamentary cultures and human embryos: The Dutch and British debates compared“, in: *Social Studies of Science* 29/6, 889-912.
- Kollek, R. (1994): „Der Gral der Genetik. Das menschliche Genom als Symbol wissenschaftlicher Heilserwartungen des 21. Jahrhunderts“, in: *Mittelweg* 36, 3, 5-14.
- Koller, V. (2003): *Metaphor clusters in business media discourse: A social cognition approach*, Vienna. [http://www.wu-wien.ac.at/inst/english/koller\\_diss.pdf](http://www.wu-wien.ac.at/inst/english/koller_diss.pdf). [accessed 11.06.2003].
- Kulawik, T. (2003a): „ExpertInnen unter sich? Geschlecht, Demokratie und Biotechnikpolitik in Schweden“, in: *Österreichische Zeitschrift für Politikwissenschaft* 32/2, 163-176.
- Lakoff, G./Johnson, M. (1980): *Metaphors we live by*, Chicago.
- Law, J. (2004): *Enacting naturecultures: A note from STS*, Lancaster. <http://www.comp.lancs.ac.uk/sociology/papers/law-encating-naturecultures.pdf> [accessed 15.06.2005]
- Leach, J. (1998): „Madness, metaphors and miscommunication: The rhetorical life of mad cow disease“, in: Ratzan, S.C. (ed.): *The mad cow crisis: Health and the public good*, London, 119-130.

- Leydesdorff, L. (2003): *Meaning and translation at the interfaces of science. Paper presented at the 27th Annual Meeting of the Society for Social Studies of Science (4S)*, Atlanta, GA, 15-18 October 2003. <http://www.leydesdorff.net/stemcell/index.htm> [accessed 09.03.2004]
- Maasen, S./Weingart, P. (2000): *Metaphors and the dynamics of knowledge*, London.
- Maio, G. (1995): „Die französische Ethikkommission. Entstehungsgeschichte, Arbeitsweise und Bedeutung am Beispiel ihrer Empfehlungen zur Embryonenforschung“, in: *Zeitschrift für medizinische Ethik* 41, 291-299.
- Maio, G. (2001): „Die ethische Diskussion um embryonale Stammzellen aus internationaler Sicht – das Beispiel Italien“, in: *Zeitschrift für medizinische Ethik* 47/3, 299-209.
- Miller, P./Rose, N. (1990): „Governing economic life“, in: *Economy and Society* 19, 1-31.
- Mitterrand, F. (1985): „Message du Président de la République“, in: *Actes du Colloque Génétique, procréation et droit*, Paris, 5.
- Murdoch, J. (1995): „Governmentality and the politics of resistance in UK agriculture: The case of the Farmers' Union of Wales“, in: *Sociologica Ruralis* 35/2, 187-205.
- Nerlich, B./Clarke, D.D./Dingwall, R. (2000): „Clones and crops: The use of stock characters and word Play in two debates about bioengineering“, in: *Metaphor and Symbol* 15/4, 223-240.
- Nerlich, B./Clarke, D.D./Dingwall, R. (2001): „Fictions, fantasies, and fears: The literary foundations of the cloning debate“, in: *Journal of Literary Semantics* 30, 37-52.
- Nerlich, B./Hamilton, C./Rowe, V. (2002): „Conceptualising foot and mouth disease: The socio-cultural role of metaphors, frames and narratives“, in: *metaphorik.de* 02, 90-108.
- Nerlich, B./Clarke, D. D. (2003): „Anatomy of a media event: How arguments clashed in the 2001 human cloning debate“, in: *New Genetics and Society* 22, 43-59.
- Nerlich, N./Dingwall, R./Martin, P. (2004): „Genetic and genomic discourses at the dawn of the 21st Century“, in: *Discourse and Society* 15, 363-368.
- Nerlich, B./Johnson, S./Clarke, D.D. (2003): „Designer babies: The role of metaphors, frames and clichés in the year 2002 debate about the first ‘designer baby‘“, in: *Science as Culture* 12/4, 471-498.
- Nerlich, B./Hellsten, I. (2004): „Genomics: Shifts in metaphorical landscape between 2000 and 2003“, in: *New Genetics and Society* 23/3, 255-268.
- Nisbet, M. C./Brossard, D./Kroepsch, A. (2003): „Framing science: The stem cell controversy in an age of presspolitics“, in: *The Harvard International Journal of Press/Politics* 8/2, 36-70.
- Nüsslein-Volhard, C. (2002). *Es gibt zu viele Gesetze in Deutschland. Interview with Nüsslein-Volhard*, 8 December, 2002: [http://www.wissenschaft-online.de/page/fe\\_seiten?article\\_id=612371](http://www.wissenschaft-online.de/page/fe_seiten?article_id=612371). [accessed 09.03.2004]
- Novas, C./Rose, N. (2000): „Genetic risk and the birth of the somatic individual“, in: *Economy and Society* 29(4), 485-513.
- Potter, J. (1996): *Representing reality*, London.
- Potter, J./Whetherell, M. (1987): *Discourse and social psychology*, London.
- Reisigl, M./Wodak, R. (2001): *Discourse and Discrimination*, London.

- Rheinberger, H.-J. (1997): *Towards a history of epistemic things: synthesizing proteins in the test tube*, Stanford.
- Rippon, H. J./Bishop, A. E. (2004). „Embryonic stem cells“, in: *Cell Proliferation* 37, 23-34.
- Rose, N. (2001): „The politics of life itself“, in: *Theory, Culture and Society* 18(6), 1-30.
- Schön, D.A. (1993): „Generative metaphor: A perspective on problem-setting in social policy“, in: Ortony, A. (ed.): *Metaphor and Thought. 2<sup>nd</sup> Edition*, Cambridge, 137-163.
- Viville, St./Ménézo, Y. (2002): „Human embryo research in France“, in: *Human Reproduction* 17/2, 261-263.
- Weigel, S. (Ed.) (2002): *Genealogie und Genetik*, Berlin.
- Widdowson, H. G. (1995): „Discourse Analysis: A Critical View“, in: *Language and Literature* 4, 157-172.
- Williams, C./ Kitzinger, J./ Henderson, L. (2003): „Envisaging the embryo in stem cell research: discursive strategies and media reporting of the ethical debates“, in: *Sociology of Health and Illness* 25/7, 793-814.
- Wodak, R. (2002): „Aspects of Critical Discourse Analysis“, in: *Zeitschrift für Angewandte Linguistik* 36, 5-30.
- Waldby, C. (2002): „Stem cells, tissue cultures and the production of biovalue“, in: *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine* 6/3, 305-323.
- Warnock Report (1984): *Report of the Committee of Inquiry into Human Fertilization and Embryology*, London.
- Wormer, E. (2004): *Mehr Wissen über... Stammzellen*, Köln.
- Zinken, J./Hellsten, I/Nerlich, B. (2005): „Discourse metaphors“, in: Dirven, R/Frank, R./Ziemke, T./Zlatev, J. (edd.): *Body, Language and Mind. Vol. 2: Sociocultural Situatedness*, Berlin.